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AN  
INAUGURAL  
DISSERTATION

ON THE  
EFFECTS OF CONTAGION UPON THE HUMAN BODY.

BEING AN ATTEMPT TO ASCERTAIN ITS MODE OF OPERATION,  
WITH A FEW OBSERVATIONS ON THE PROPER METHOD  
OF PREVENTING AND CURING FEBRILE  
CONTAGIOUS DISEASES.

SUBMITTED TO THE EXAMINATION OF THE  
Rev. John Ewing, S. T. P. Provost,  
THE MEDICAL PROFESSORS AND TRUSTEES

OF THE  
UNIVERSITY OF PENNSYLVANIA,  
FOR THE DEGREE OF DOCTOR OF MEDICINE,

ON THE 19th DAY OF MAY 1794.

By Lewis Condict, of New-Jersey, K

MEMBER OF THE AMERICAN MEDICAL SOCIETY  
AT PHILADELPHIA.

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" NEC POST RATIONEM MEDICINAM ESSE INVENTAM, SED  
POST INVENTAM MEDICINAM RATIONEM ESSE QUESITAM."  
CELSUS.

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1794.

Doct<sup>r</sup> Wm<sup>o</sup> Duffield

with the respectful compliments

of his friend

& humble servant

Wm<sup>o</sup> Duffield

PROFESSOR OF ANATOMY, SURGERY, AND MIDWIFERY.

CAPTAIN WISTAR, M.D.

PROFESSOR OF ANATOMY, SURGERY, AND MIDWIFERY.

BENJAMIN RUSH, M.D.

PROFESSOR OF THE INSTITUTE AND CLINICAL MEDICINE.

ADAM KUHN, M.D.

PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE.

SAMUEL J. GRANT, M.D.

PROFESSOR OF THE CLINICAL MEDICINE.



GENTLEMEN,

I have the honor to acknowledge the receipt of your letter of the 10th inst.

in relation to the matter of the donation of the library of the University of

Cambridge to the British Museum, and in reply to inform you that the

same has been forwarded to the proper authorities for their consideration.

I am, Sir, very respectfully, your obedient servant,

Wm<sup>o</sup> Duffield

Secretary to the Trustees of the British Museum.

I am, Sir, very respectfully, your obedient servant,

Wm<sup>o</sup> Duffield

Secretary to the Trustees of the British Museum.

I am, Sir, very respectfully, your obedient servant,

Wm<sup>o</sup> Duffield

Secretary to the Trustees of the British Museum.

The Author.



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D E D I C A T I O N.

TO

WILLIAM SHIPPEN, JUNIOR, M. D.

PROFESSOR OF ANATOMY, SURGERY AND MIDWIFERY,

CASPAR WISTAR, M. D.

ADJUNCT PROFESSOR OF ANATOMY, SURGERY AND MIDWIFERY,

BENJAMIN RUSH, M. D.

PROFESSOR OF THE INSTITUTES AND CLINICAL MEDICINE,

ADAM KUHN, M. D.

PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE.

SAMUEL P. GRIFFITTS, M. D.

PROFESSOR OF THE MATERIA MEDICA,

GENTLEMEN,

PLEASE to accept the following DISSERTATION, as a small mark of gratitude for the many useful lessons I have received from your Lectures, and as a pledge of the sincerity of my friendship and esteem for you.

That you may long continue the ornaments of the healing art, in the University of Pennsylvania, which has so deservedly, by your exertions, arrived at a high pitch of eminence, and be useful to mankind, is the sincere prayer of

WORTHY SIRS,

YOUR OBLIGED HUMBLE SERVANT,

The AUTHOR.

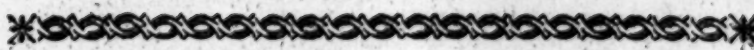
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# P R E F A C E.

I have hoped the benevolent reader will excuse the rough and unpolished style, in which the ideas intended to be conveyed in this dissertation are clothed. The limits of time and of localities perhaps, would not admit a revision, and the author was obliged to commit to the press what he wrote in a short time, and perhaps not perfectly correct. The language is a collection of the established phrases, and many of them are not new, and from the opinion of many, the style is not perfect. Still it is not more than what appears to be a plain and rational conclusion drawn from a number of facts.

The author cannot but regret that some particular circumstances prevent the appearance of the dissertation of this kind, and object various upon the true philosophy of this country. There are what he principally relied on for the full proof of the doctrine. However they will shortly appear from a much better authority, and well substantiated, and if considered with candour, will I think sufficiently prove the correctness of that doctrine to be what is here asserted.





# P R E F A C E.

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**I**T is hoped the benevolent reader will excuse the rough, unpolished garb, in which the ideas intended to be conveyed in this dissertation, are cloaked. The shortness of time allowed for its preparation, would not admit a revision, and the author was obliged to commit it to the press in the same form in which it was first penned.—However the doctrine which is endeavoured to be established, may differ from many medical oracles, and from the opinion of many reputable practitioners; still it is no more than what appears to be a fair and rational conclusion drawn from undoubted facts.

The author cannot but regret that some particular circumstances prevent the appearance in this dissertation of some facts and observations upon the late epidemic of this city. These are what he principally relied on for the full proof of the doctrine. However they will shortly appear from a much better authority, and well authenticated; and if considered with candour, will I think sufficiently prove the contagion of that disease to be what is here asserted.

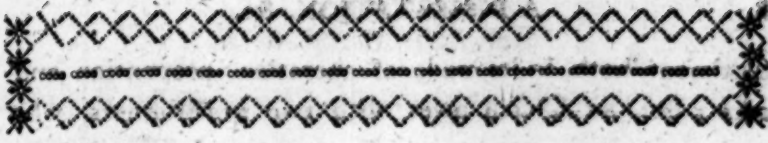
# A DISSERTATION, &c.

**T**HE human frame, in consequence of its delicacy of structure, complexity of machinery, and extensive various motions powers, is subject to disease in all its various parts, which are daily counting down thousands of millions of mortals in the very morning of life.

It is much to be regretted that the most of these travellers are without the reach of the healing art, which might very be considered impeded, as long as there are any avenues to the grave, except that of old age.

Of all the diseases which afflict mankind, none are so destructive, as those which are called febrile contagious affections. Of the rank of this affection, the Small Pox, Plague, Yellow Fever (which lately proved fatal to some of citizens of Philadelphia) and some others, which are generally to be enumerated, are melancholy proofs.

The manner in which Contagion operates upon the body, to produce its deadly effects, has long been a bone of contention among physicians. And though it is not the business of them, we might expect that they would agree in



## A DISSERTATION, &c.

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THE human frame, in consequence of its delicacy of structure, complexity of machinery, and exposure to various noxious powers, is subject to disease in all its varieties of shape, which are daily cutting down thousands of our fellow mortals in the very morning of life.

It is much to be regretted that no more of these ravagers are within the reach of the healing art, which must ever be considered imperfect, as long as there are any avenues to the grave, except that of old age.

Of all the diseases which afflict mankind, none are so destructive, as those which are called *febrile contagious diseases*. Of the truth of this assertion, the Small Pox, Plague, Yellow Fever (which lately proved fatal to so many citizens of Philadelphia) and some others, which are unnecessary to be enumerated, are melancholy proofs.

The manner in which Contagion operates upon the body, to produce its deadly effects, has long been a bone of contention among physicians. After such frequent occurrences of them, we might expect that they would agree in

sentiment, both, in its mode of operation, prevention and cure : but we seldom meet with two practitioners, who are of the same opinion in either respect. This is considered as an evidence, that truth yet lies concealed behind the curtain, and has given origin to the proverb, "*Ars medica conjecturalis est.*" But from the improvements and discoveries which are daily making, in the different departments of medicine, we cannot but hope that we shall one day arrive at certainty in them all, and that Cancer and Pulmonary Consumption will cease to be the *opprobria medicorum*.

I shall not, in this paper, attempt to consider the origin of Contagion ; whether it be the product of animal, or vegetable putrefaction ; but leave the discussion of these subjects to abler pens, and shall confine myself principally to the consideration of its effects when applied to the human body. Were we well acquainted with its precise mode of operation, it would assist us greatly in determining the most proper method of prevention and cure. I am conscious of my inability to do justice to so important a subject, more particularly in so short a space of time, and within so narrow a compass, as circumstances at present will admit of.

If the matter of contagion was a substance which we could analyse chemically, and discover its constituent parts, analogy would, no doubt assist us greatly in determining its mode of operation ; but as it is not evident to our senses, we can judge of it only by its effects.

Different have been the opinions of physicians respecting the seat of contagious diseases : Boerhaave and his followers, supposed the blood to be the seat of all febrile diseases ; and that the matter of contagion, induced an acrimony or morbid matter, which circulating in the vessels was the proxi-



mate cause of the disease. In support of this hypothesis it was observed,

1st. That most febrile diseases which terminated favourably, ended by some critical discharge of morbid matter, by some of the emunctories, or it was deposited in an abscess in some part of the body.

A second argument in favour of the blood being the seat of the disease was taken from the putrefactive state of it, which they thought sufficiently proved by the foetid smell of the patient, and dissolved state of the blood, as appeared when effused.

A third, was the frequent occurrence of hemorrhagies, which they imputed to the dissolved state of the blood.

The first of these arguments is very ably refuted by Doctor Rush in his Lectures on Fevers. He observes in the first place, that fevers are often induced by frights, and are cured by bark, electricity, passions of the mind, &c. the former of which can have no effect in generating, nor the latter in evacuating a morbid matter.

In the next place he remarks, that no preternatural acrimony is observed in the urine on perspiration, which are supposed critical evacuations; and fevers often terminate without any such discharges whatever. As to abscesses, they as often follow other diseases as fevers, and when they do occur, are the consequences of partial determinations and weak action of the vessels of the part affected.

With respect to the second argument, the putrefactive state of the fluids; it has been so ably combated by Doctor Seybert in an inaugural dissertation published last spring, that I shall not enter upon the consideration of it, but refer



to the above publication. He has shewn a putrefaction of the fluids to be so incompatible with life, and so contrary to actual experiment, as not to leave the least doubt in my own mind upon the subject. It is true, the blood is often found dissolved after being effused; but I cannot but think with Doctor Seybert, that it took place after it had been discharged from the arteries, and that the putrid stench was owing to the same cause.

A third argument is the frequent occurrence of hemorrhages, which they impute to a dissolved state of the blood. But what can be more absurd than to say that the rupture of a vessel is the consequence of a particular condition of the contained fluid? unless we suppose it capable of destroying, or eating away the vessel, which I think no one will assert. If the blood escapes, the fault is certainly in the vessel, and not in the blood, any more than a piece of money, for falling through the miser's purse which is worn out in the service.

The violence of the hemorrhage will in a great measure be proportioned to the impetus of the blood; but this by no means depends on its dissolution, but upon the force with which the arteries contract upon their contents and propel them forward.

At present, the humoral pathology, seems almost entirely exploded from the medical schools.

The celebrated Cullen, was one of the first systematic writers, who taught us not to look for the seat of febrile diseases in the fluids. The substance of the doctrine which he substituted, is the following.

He supposes the matter of contagion, when taken into the body, has a peculiar *sedative* effect upon the brain and

nervous system, destroying their mobility and *directly* weakening their energy; and that through the medium, and by the connection of the nerves, with every part of the body, the whole partakes of this debility, but more particularly the sanguiferous system; and that in consequence of the weak action of the heart and large arteries, the extreme parts are not furnished with their usual supply of blood, which gives rise to the cold stage of fever, and by the intervention of the *Vis Medicatrix Naturae*, a spasm is formed upon the extreme vessels, which proves an indirect stimulus to the heart and large arteries, exciting them into violent action, to overcome the debility and spasm induced.

This doctrine, although very plausible at first view, yet upon a more minute investigation and scrutiny, I think it will be found, that the first principles upon which it is founded, are erroneous.

Much altercation and dispute has arisen in the medical schools, respecting the term *sedative*. By it as used by Doctor Cullen, we are to understand, a power whose first, and immediate operation is *directly* debilitating. But in this sense of the word, it seems liable to many exceptions.

If the doctrine of animal life which is now taught in this University (viz. that it is a forced state, depending on the operation of stimuli) be true; and if the ordinary stimuli which support life, are constantly acting, the usual degree of healthy excitement will be kept up; and unless we suppose the contagion capable of intercepting, or otherwise preventing the application of them; it will be difficult to conceive how it can by a *directly sedative* operation, so debilitate the system, as to produce the phenomena of a contagious fever.

The existence of such a power, has never yet been proved. There are a few substances, as Nitre, and Digitalis which are commonly said to possess sedative virtues, as they diminish both the force and frequency of the pulse. But if they are called sedatives, I believe it is more out of complaisance to custom, than any directly debilitating qualities they are possessed of. The diminished action which follows their use, may perhaps be owing to abstinence from food, which is occasioned by the disease they are used for. These medicines likewise encrease the evacuations, particularly of urine and sweat; and it is well known that diminished action follows depletion.

In order to avoid all ambiguity, Physicians should accurately define the meaning of their terms; if for instance when they speak of the sedative effects of wine, or ardent spirits, they mean that state of indirect debility which follows the taking an immoderate dose of them, there would be no impropriety in using it; but as the term, sedative, is commonly understood, viz: a *directly* debilitating power, I believe we are as yet unacquainted with any power which possesses such virtues.

If we compare the operation of such powers as are commonly called *directly* debilitating or *sedative*, as cold, fear, evacuations, abstinence, &c. \* with that of contagion, we find their effects very different. Persons who have been exposed to them so long as to die of them, have never shewn any symptoms of a contagious fever. A long continued application of cold, and moisture, have been said to have produced the Scurvy, but never a contagious fever, as I have heard or read of. On the contrary most conta-

\* Although these are commonly called sedatives, yet in reality they are nothing more than the abstraction or absence of the natural stimuli of heat, food, and the stimulus of distention from blood and chyle in their proper vessels.

gious diseases seem to be the offspring of heat, and generally disappear upon the approach of winter's cold\*. The Plague it is true has raged in cold weather, but it does also in warm.

If the matter of contagion was of a directly debilitating or sedative nature, we might expect that those persons, who had previously suffered by cold, hunger, or evacuations, or in other words, those, who were already labouring under direct debility, would be more easily affected than others, by contagion, during the reign of an epidemic. For a certain degree of debility being already induced, a slight degree of force in the contagion, would soon produce that state, which constitutes the actual disease. But this we find is not the case. Mosely, speaking of the Yellow Fever, says, "Subjects most likely to be attacked by it, are the florid, the gross, the plethoric;—that sort of strong, full, youthful people, with tense fibres, who, in England, are said to resemble the picture of health. In short, so are all people, who are of an inflammatory diathesis, and do not perspire freely†." His observation is confirmed by Dr. Rush. He says in his lectures, that, while it was prevalent in this city, it most frequently attacked the robust and healthy citizens, and was most violent among them, few recovering; whilst those who lived sparingly, and used gentle evacuations, frequently escaped the disease, and in those who were attacked by it, the symptoms were much milder, and they had a quicker recovery.—The same author above quoted (Mosely) speaking of a putrid bilious fever, which affected the army in Jamaica, says, "Some of the gross and plethoric, died soon after being attacked, in convulsions."

\* The Small Pox and Measles are an exception.

† Vide Mosely on tropical diseases, page 415.



As persons most likely to be affected by contagious diseases, are such as above described, if the exciting cause was directly debilitating, it would certainly counteract the predisposition; for, as they are already excited something above the healthy point, the contagion would reduce the excessive excitement, and an approach towards health would be the consequence.

We find the method of treatment in the last stage of a contagious fever, quite different from that of a person debilitated by cold, hunger, or any other like causes. In the former we make use of the most powerful stimuli in the shops, as ether, wine, vol. alkali, bark, opium, &c. but to a man nearly famished with hunger, or perished by cold, this treatment would be certain death. We begin in these cases with the most moderate stimuli in small doses, and increase gradually, until, by degrees, we have worn down the morbid excitability, and restored the lost excitement. The treatment differs still more, in the first stage of these contagious fevers; for the most successful way of curing them, has been found to be by evacuations.

If then we find no similarity between the operation of such powers, as are commonly called sedative, and that of the contagion, which produces the Plague, Yellow Fever and others, and that the former, instead of assisting the latter, seems rather unfavourable to its operation, whilst it is rendered more active by heat, full living, &c. and if, instead of being cured by the same means, an opposite set of remedies are found most useful, we may, I think, safely conclude, that the matter of contagion is not a sedative or directly debilitating power.

As most contagious fevers begin with great violence, producing the most alarming symptoms, and oftentimes death, in a very short time, from the first onset, we may conclude



*cause*

that the ~~cause~~ whatever it may be, is a powerful one. Physicians are seldom or never called upon to visit a patient, till some time after the attack of the disease, and hence the first effects of contagion, generally escape our notice. We have no certain rule, by which we can judge, when the system is saturated, (if I may use the expression) with the contagion. Many persons have been very much exposed to it, and have escaped unhurt; while others, who have not undergone half the exposure, have fallen victims to its fury. A certain state or condition of the body, is no doubt necessary, to render it more susceptible of the operation of the contagion. But authors are by no means agreed what this state is. A certain length of time is likewise requisite, after the introduction of contagion into the body, to produce its effects. This varies in different diseases, and in different persons labouring under the same disease. This is most probably owing to the varieties of constitutions, some being abler than others to resist its effects, and likewise to the different degrees of virulence in the contagion.

The most common precurfours of contagious diseases, are muscular debility, lassitude, giddiness in the head, pains of the back and loins, head-ach, loss of appetite, &c. These continue for a longer or shorter time, and the disease is ushered in by a cold fit, which is soon followed by a hot one, with all the usual symptoms of fever, which are more or less severe, according to the violence of the cause, and susceptibility of the patient to be acted upon.

These symptoms very much resemble those which are the consequences of a fit of intoxication, after the first or stimulant effects of the ardent spirits have gone off and left the patient in a state of indirect debility. Instances of this kind are very common, and I dare say have frequently been observed by physicians. I will here relate one, which came

within my own observation. Some time in the month of September last, a wood-chopper was so intoxicated, that he lay all night exposed to the fall of a heavy dew, without any covering but the canopy of heaven. The next day he complained much of head-ach, sickness at stomach, pains in his back and loins, stiffness and debility. At noon he was seized with chilliness and shivering, which were succeeded by a burning fever, suffusion of the face and eyes, most excruciating pain in his head and epigastric region, which was very sore and painful to the touch. Twelve oz. of blood were taken from him, and one oz. of Glauber's salt given, by which means he got considerable relief. The symptoms recurring next day, but with less violence, the blood letting was repeated, and by a low vegetable diet, cool air and watery drinks, he, in a few days, recovered so far as to be able to go about his business. Had this case occurred in a place where the Yellow Fever was epidemic, it would no doubt have passed currently enough for that disease, as it had almost every diagnostic symptom of it, except the yellowness of the skin, which I am told was not present in every case. If we find that the same effects are induced by an immoderate dose of ardent spirits, as by the contagion of the Yellow Fever, and that both are cured by the same means, the rules of philosophizing, which direct us to attribute similar effects to similar causes, would teach us to infer that the mode of operation in both is similar, viz. *stimulant*.

Let us now take a short view of some of the most common febrile contagious diseases, and see if the same may not be inferred from the method of treatment, which has proved most successful in them.

Sydenham, speaking of the Plague which visited London in the year 1665, says, that Pleuritis, Quinsies, and other inflammatory diseases were epidemic, and he never saw

them more frequent than they were a few weeks before the Plague made its appearance. This was what first induced him to use the Lancet for the cure of this dreadful disease, which he found to be the only remedy capable of resisting its force. The blood which was drawn, resembled that of a patient labouring under a Pleurisy, or Rheumatism. He relates the story of a surgeon in the army, who applied to the Governor for liberty to relieve his fellow soldiers, who were afflicted with it; which being obtained, he took away so large a quantity of blood, that the men were ready to faint. The consequence of this mode of treatment was, that not one of them died, although bleeding was the only remedy used.\*

Purging and sweating are likewise mentioned by Dr. Sydenham, as remedies for the Plague: the latter he advises to be kept up for 24 hours, by which means a large quantity of fluids is drawn off, and the patient is certainly reduced, as by the more immediate way of blood letting. In some instances the Plague is said to begin with such highly putrid symptoms that any evacuations are found to increase all the bad symptoms, and hurry on the dissolution of the patient; and that a very opposite set of remedies, are the only ones capable of giving any relief. But this will not militate in the least against the doctrine, if it be well examined. It is probable the contagion in these instances is so highly concentrated, and the condition of the patient so favourable to its operation, that the first or inflammatory stage, of the disease, terminated very shortly in gangrene, and mortification of some of the viscera. It is a law of the system, that the more violent the attack, the sooner will nature yield to the conflict, and terminate the disease. No more happens here, than what we daily observe in a common phlegmon, the more violent the in-

\* Vide, Wallis's Sydenham on the Pestilential Fever of 1663.

inflammation, the more apt are they to terminate in gangrene and mortification; and when this has once taken place, the mode of treatment is very different from what it was during the inflammatory stage. It is however evident enough that if blood letting and other remedies, which are proper to restrain or moderate inflammation, had been timely used, these consequences might have been prevented.

If, in one instance, the Plague begins with excessive action in the arterial system, and all the symptoms of an acute inflammatory disease, and affects another person with a languid, weak pulse, dejected and pallid countenance, coma, and all the attendants upon a Typhus gravior; shall we say that the cause which produced them was different? By no means; they are nothing more than different stages of the same disease, succeeding each other sooner or later, according to the violence of the exciting cause, the constitution of the patient, and method of treatment pursued.

All Physicians of the present age seem to agree, that the contagion of the small pox is of a highly stimulant nature, at least in their practice they do; for they find, that those persons generally have the disease most favourably, who abstain from animal food, and spirituous liquors, and live upon a low vegetable or milk diet and watery drinks, who avoid heat, immoderate exercise, &c. Yet such is the inflammatory tendency of the disease, that in some instances, notwithstanding all the above precautions have been used, it is found necessary to use blood-letting and purging, to prevent the indirect debility which would otherwise have followed.

In one instance the contagion of this disease will produce pustules of a mild distinct kind, with but slight inflammatory symptoms, and terminate in the most favourable manner,



but in another patient, the pustules will be of the confluent species, the inflammatory stage will be violent, and of short duration, quickly disappearing, and will be succeeded by highly putrid symptoms, which will soon usher in death.

How often do we observe a Typhus fever to follow a Peripneumony, where the inflammation was violent, and blood sparingly drawn? I have frequently listened to hear people tell how narrowly they have escaped from death. "I was first taken with the Pleurisy, then with a Nervous fever, which was followed by a Putrid fever." It is probable that the whole catalogue was the consequence of injudicious treatment in the Pleurisy, where the Physician has been too timid in bleeding, or has had to do with a timid patient and relatives (which is often the case) who think they know as much as the Physician, and take upon themselves to say "Doctor, you have taken blood enough."

The Scarlatina often appears with such inflammatory symptoms as to indicate bleeding and purging, which is then practised with advantage; but when it has been suffered to run on for some time without any attempt to mitigate its violence and a Typhus succeeds, all preternatural evacuations are then highly improper, and a different set of remedies become necessary. In some instances it begins with a severe inflammation of the fauces, which terminates very shortly in gangrene and mortification of the parts. Authors forbid evacuations here, but analogy would induce us to suppose, that if they were timely employed, they would greatly mitigate its violence. Doctor Rush informs us in his lectures that when one child in a family has been seized with it, he has prevented the rest from taking it, by giving each a cathartic\*.

\* Physicians differ in sentiment respecting the Scarlatina and Cynanche Maligna. Some assert that they are two distinct diseases, while others say that they are only different degrees of the same disease.

The Influenza I believe appears universally with inflammatory symptoms, and is relieved by depletion. The same may be said of the measles.

The Dysentery frequently appears with such inflammatory symptoms as to indicate bleeding, which has been practised with great advantage, as we are told by authors who have written on the disease.

The experience of all ages has shewn that the contagion of the Yellow-Fever, acts as a powerful stimulus, inducing violent inflammatory action of the arterial system; and we have the authorities of Lind, Mosely, Jackson and others to assert that bleeding and purging are the only remedies to be depended on for the cure of it in its first stage: the experience of the Physicians of Philadelphia, during its reign in this city, would alone be sufficient to establish their superior efficacy. Dissections of patients who have died both of this and the preceding disease, have abundantly shewn their inflammatory tendency.

It is worth noticing a remark, which I have heard made by Physicians who were most conversant in this disease, during its reign in this city; which is, that it was particularly fatal to those females, whom it attacked during their pregnancy; but very few of them recovering who were seized with it; and that in almost every instance it produced abortion or miscarriage just before death.—What is this to be imputed to? Is it on account of that particular *irritable state of body*, which so universally attends the sex during their pregnant state, rendering them more susceptible of impressions? Or is it owing to the *stimulant nature* of the Contagion of the Yellow fever, being superadded to that of the *fœtus in utero*, and by their conjoint operation sooner producing *indirect debility*? Analogy would induce us to suppose the latter the most probable supposition; as we have alrea-

dy observed, that persons of a full plethoric habit of body, were more likely than others, to have the disease violently.

From a retrospect of what has been said upon the analogy between the effects of contagion, and the stimulant properties of wine, ardent spirits, &c. and the similarity of treatment in diseases which are acknowledged inflammatory with that which has proved most successful in the first stage of contagious febrile diseases, I think the following conclusions may be fairly drawn.

That the matter of contagion whatever it may consist of, is of a highly stimulant nature, which, when applied to the human body, operates upon the excitability in the same manner as all other stimuli do, by encreasing the excitement to an unusual degree, but more particularly of the sanguiferous system. But as all violent and preternatural efforts must at length be followed, by a state of relaxation or inactivity proportional to the violence of the preceding action, this state of atony or indirect debility, is induced sooner or later, according to the virulence of the contagion, the habit of body, and constitution of the person affected.

Perhaps it may be urged as an objection to this doctrine, that some contagious diseases as the Plague for instance; attack so suddenly after exposure to the contagion, and with symptoms so different from those of any stimulus which we are acquainted with; that its operation cannot be stimulant. The patient is suddenly seized with great prostration of strength, sickness, vomiting, vertigo, &c. — But let a person who never has been accustomed to the use of tobacco, (which nobody denies to be a stimulus) undertake to smoke a segar, or chew a large quid of it, and he will be almost instantaneously seized with the same symptoms above described; but if he should smoke not more than one third of it, or take no more than perhaps half the

quantity into his mouth, the effects will not be any thing like so violent. The same in all probability is the case with the Plague : if the contagion be highly concentrated, or abundant in quantity, its effects will be more violent and sudden.

Perhaps it may be asked, why does the contagion of the small pox always produce the same disease, in preference to the measles, yellow fever, or any other contagious disease, since all contagions are stimulant, and operate in the same manner upon the body? To this I answer, that the same cause which occasions an acorn to produce an oak, rather than a bramble or a thorn-bush; influences the variolous matter to produce the small pox, in preference to any other disease.

I shall not attempt to assign any reason why the increased action of the arterial system which occurs in febrile contagious diseases, follows debility, but shall refer it to a law of the animal economy; and shall content myself with having endeavoured to prove that this debility is not of the *direct* but *indirect* kind; as it leads to a very different method of treatment from what is commonly pursued in diseases of *direct* debility, and which I am persuaded, might be used more frequently in febrile diseases than is commonly practised in this country at present, provided it be used in proper season.

The remedies in common use among Physicians, for the cure of low continued fevers, (although they often commence their attack with symptoms of too much action in the arterial system) are, generally speaking, Tonics and Stimulants. When called early in the disease, an Emetic or Cathartic is generally ordered, to cleanse the first passages; but some neglect even this precaution, and from the very onset of the disease, prescribe Bark, Wine, Vol. Alkali,



Ether, Opium, &c.——This was the method pursued in the late Epidemic of this city, when it first made its appearance, and a dreadful mortality was the consequence; but a very few of them recovering. But when these were laid aside, and blood-letting and purging substituted in their stead, the effects were very different; a much smaller number dying, in proportion to those who were seized with it.

Doctor Mosely in his treatise on tropical diseases, gives an account of a Putrid bilious fever, which seized the army in Jamaica, and was attended with the following symptoms. Sudden loss of strength, nausea, clamminess in the mouth and fauces; the eyes were dull, tinged with bile, and sunk in the head, pulse low and quick, skin moist, abdomen tense, great anxiety, yellowness of the skin, coma, cold sweats, hiccup, &c. and ended in death on the second or third day. This disease he tells us was at first treated with bark, and cordial medicines, and every man, most invariably died of it who was taken. Upon reflecting on its fatality, and where the error of treatment lay, he suspected it to arise from the dread of evacuations in the beginning, on account of inducing debility. Accordingly, purging was advised at the onset, and to be continued, until it was contraindicated by weakness. "But," says he, "so far was the result of the apprehension from being confirmed by the event, that it was found that the men acquired strength in proportion as they were diluted and purged." The evacuation by stool was carried to a great length. "Many patients" continues he, "had twenty stools a day, for three days successively." The consequence of this treatment was, that not a single patient died, who followed it.

The method of treatment in diseases of indirect debility as advised by a late celebrated author, is certainly neither founded upon reason, nor the success of the practice. In

violent diseases as the Plague, Yellow fever, &c. where the system is suddenly so overpowered with stimuli, as to sink as it were, beneath the weight; the method recommended by him, is to throw in the diffusive stimuli in large and repeated doses, and thus endeavour to overcome force, by force; but as all violent efforts must be succeeded by a state of relaxation, proportional to the preceding action; the excitability will at length be exhausted, and the excitement when it falls, falls like Lucifer, "never to rise again."

It has been frequently observed in Peripneumony, that the system has been so overloaded, that the pulse was scarcely perceptible; but upon blood being plentifully drawn, it has immediately become fuller and stronger. This was very frequently the case in the late Epidemic of this city; the pulse has become more active even after the second and third bleeding.

If we attempt to take the cure of these diseases out of the hands of nature, we must do it altogether, and leave nothing to her care. I have frequently been informed, and by good authorities, that many patients in the Yellow fever, after the first bleeding, found all their bad symptoms, particularly the pains of the head, and epigastric region, greatly aggravated, and the pulse became much fuller and more active. This was sometimes the case after the second bleeding; and the patient was so sensible of its bad effects, that he refused to submit to its repetition and died in consequence; whilst others who had it performed a third time, found all their pains mitigated, and they had a speedy recovery. The reason of these phenomena is obvious: the contagion was so highly concentrated and so abundant, as immediately to overwhelm the powers of life; but a part of the burthen being removed, the remainder is more proportional to the excitability of the patient, and the arterial system is excited into violent action, whereby a larger

quantity of blood than usual is determined to the head and abdominal viscera; which encreases the inflammation, and consequently the pain of these parts.

Perhaps it may appear strange at first sight, to advise evacuations for the prevention and cure of contagious febrile diseases, particularly to such as have been accustomed to see a contrary method pursued; but if so many instances can be adduced from such respectable authorities to prove its superior efficacy, it is certainly entitled to a further trial. It is only in the first stage of these diseases, that this treatment will be of service. In the last stage, the only remedies which will be found of any advantage, are Tonics and Stimulants.

What can be more rational than this method of treatment in the first stage, provided the doctrine which we have endeavored to establish be just? As the patient is already sinking under <sup>an</sup> accumulated load of *preternatural*, which are superadded to the *natural* stimuli; which will be the most reasonable mode of proceeding, either to endeavour to relieve fatigued nature by throwing off some of the load by blood-letting and other evacuations, (as we are as yet ignorant of any direct method of throwing off the contagion itself) or to increase it by throwing in stimulating drinks and medicine, with a nourishing diet, with a view, forsooth of resisting the effects of the contagion? Certainly the former. We should be extremely cautious how we administer stimulant medicines, when the patient is already struggling under an excess of stimuli; for we do no better than heaping coals of fire on his head.

It is true that Physicians never will be very great gainers either in reputation or pocket, by stifling diseases in the bud; although the patient is saved much unnecessary pain and expence by the means. Mankind are not well enough

informed, to know what would have been the consequence if precautions had not been used by the Physician; and as they think he had done but little, little ought his recompence to be. But if another Physician of less abilities should have been called in who had not discernment enough to foresee the event, and being ignorant of the necessity of using proper precautions by way of preventing the formation of the disease, should neglect them entirely, and suffer his patient to come to the very threshold of death's door, and even then, perhaps, *nature* may perform the cure; I say he will gain more, either for his ignorance or knavery, (which ever it may happen to be) than the honest and judicious practitioner, who would have saved the patient all his unnecessary pain, and the consequences of a tedious sickness, and slow recovery.

But let not these considerations swerve us from the path of duty. Let us impute the fault to the imperfection of human nature; and may the pleasing reflection of having done our duty, by relieving as much as is in our power, the distresses of our fellow-mortals, ever be superior to the desire of fame, and thirst for mammon.



THE END.



